

# **Navajo Abandoned Uranium Mine**

## **Site Screen Report**

*This form is for use at the site of abandoned uranium mines (AUM) located on Navajo Nation lands. Applicable sites include all mine and mine features that have or have not undergone reclamation by the Navajo Abandoned Mine Lands Reclamation Program, including features, adits, pits and waste piles. Applicable sites also include all AUM sites listed in the USEPA CERCLIS database, all sites listed in the 2008 AUM GIS Report issued by USACOE and USEPA, all AUM sites on allotment lands associated with the Navajo Nation, and any and all AUM sites not listed in any database located on Navajo lands. Reconnaissance of any sites located on lands adjacent to Navajo lands that may be impacting Navajo lands will need to be coordinated with the authorities appropriate to those lands.*

*The purpose of the form is to ascertain the status and location of the identified AUM site, and record all immediate site information associated with the mine site. Decisions and recommendations on what additional steps are needed will be provided on a separate document.*

### **John John 1 AUM Site**

**Navajo AUM Northern Region**

**Prepared by:**

**Weston Solutions, Inc.**

**Contract: W91238-06-F-0083**

**12767.063.496.1111**

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**Part I Site Identification, Location and Status****Site Names and ID numbers as applicable****Mine ID:** 270, 272, 442**Map ID:**  
#270 – N77  
#272 – N78  
#442 – N79**CERCLIS:** NNN000908869**Navajo Abandoned Mine Land Reclamation Program:** #270 – NA-0418  
#272 – NA-0418  
#442 – None**Local name / Aliases:** John John No. 1; John John #1; MP-334**Chapter and local area:** #270 – Beclabito Chapter  
#272 – Beclabito Chapter  
#442 – Beclabito Chapter**County:** San Juan      **State:** New Mexico**Lat/Long:** #270 - 36.7969696198 N / -109.044727128 W  
#272 - 36.7961839086 N / -109.043505716 W  
#442 - 36.7423022205 N / -109.276833456 W**Nearby road and highway:** Indian Route 63      **Local Post Office:** Beclabito, NM**Surface Land Status: check one or more and provide ownership and contact information below**

<b>Tribal Trust Land</b>	<input checked="" type="checkbox"/>	<b>Public lands</b>	<input type="checkbox"/>
<b>Private</b>	<input type="checkbox"/>	<b>Tribal Fee Land</b>	<input type="checkbox"/>
<b>Bureau of Land Mgmt</b>	<input type="checkbox"/>	<b>Allotment</b>	<input type="checkbox"/>
<b>State</b>	<input type="checkbox"/>	<b>Fee land</b>	<input type="checkbox"/>

**Subsurface Mineral Rights:**

No information on subsurface mineral rights ownership was found in the EPA/AUM Database.

**Claim and operator information:**

The mine site surface land status is classified as Tribal Trust Land. Historical documents showed the operator of the mine as John John in 1955. No other historical ownership / lease information was identified in the EPA/AUM database.

**Number of residential structures within 200 feet of mine:** None

**Estimated volume of mine waste onsite:**

#270 – 926 yd <sup>3</sup>
#272 – 1,042 yd <sup>3</sup>
#442 – 208 yd <sup>3</sup>

## Part II              Summary of radiological readings

### **Mine ID # 270**

#### **Highest gamma radiation measurement:**

16,653 counts per minute (cpm)

#### **Describe any other radiological measurements:**

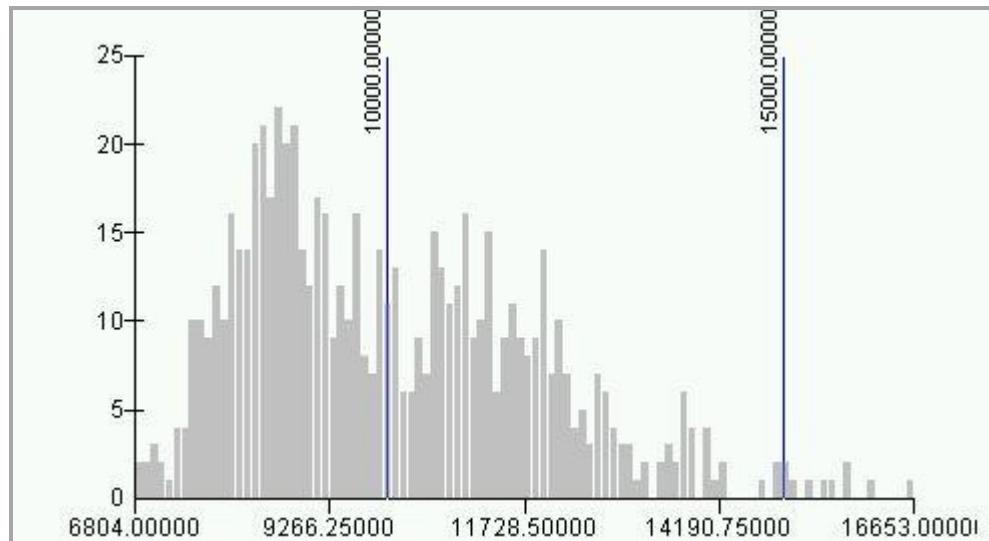
A total of 687 gamma radiation measurements were collected from the mine site, ranging from 6,804 cpm to 16,653 cpm. Measurements collected at the waste piles ranged from approximately 12,000 cpm to 17,000 cpm. The measurements are represented in Figures 2 and 3.

**Background Locations**  
#1 6,910 cpm

**Average background = 6,910 cpm**

#### **Distribution Chart and Statistics:**

The following chart and statistics were generated by ESRI ArcGIS 9.3.1, and show the general distribution of the site gamma radiation measurements. The horizontal X axis represents the gamma radiation reading levels in cpm (lowest levels to the left). The vertical Y axis represents the frequency of each gamma radiation level.



Count:	687
Minimum:	6804.00000
Maximum:	16653.00000
Sum:	6902674.00000
Mean:	10047.56041
Median:	9720.00000
Standard Deviation:	1829.79173

**Mine ID #272****Highest gamma radiation measurement:**

110,917 counts per minute (cpm)

**Describe any other radiological measurements:**

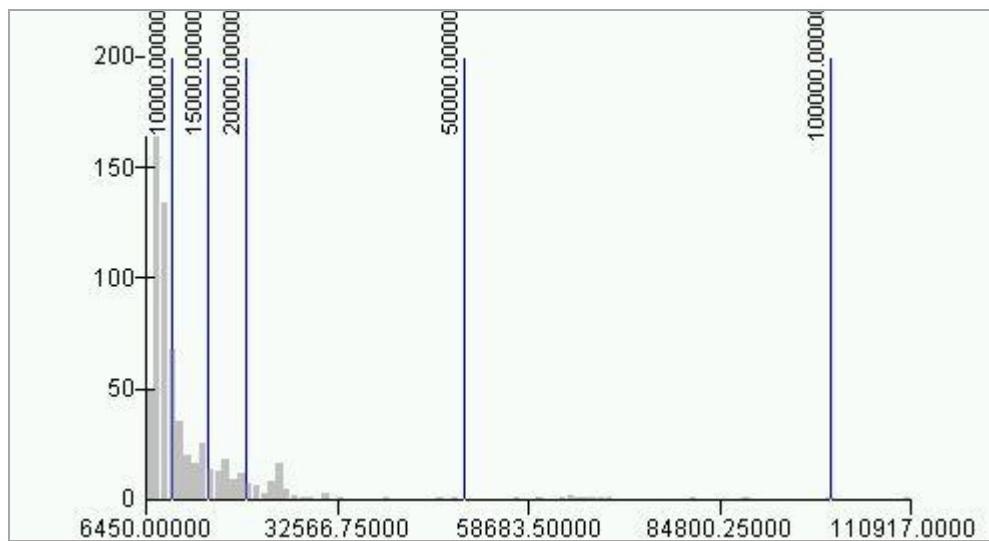
A total of 660 gamma radiation measurements were collected from the mine site, ranging from 6,450 cpm to 110,917 cpm. Measurements collected at the entrance to the adit were found at levels above 100,000 cpm, and at the adit waste pile at 70,000 cpm. The measurements are represented in Figures 4 and 5.

**Background Locations**  
#1 6,732 cpm

**Average background = 6,732 cpm**

**Distribution Chart and Statistics:**

The following chart and statistics were generated by ESRI ArcGIS 9.3.1, and show the general distribution of the site gamma radiation measurements. The horizontal X axis represents the gamma radiation reading levels in cpm (lowest levels to the left). The vertical Y axis represents the frequency of each gamma radiation level.



Count:	660
Minimum:	6450.00000
Maximum:	110917.00000
Sum:	8444500.00000
Mean:	12794.69697
Median:	9351.50000
Standard Deviation:	10663.62520

**Mine ID #442****Highest gamma radiation measurement:**

153,631 counts per minute (cpm)

**Describe any other radiological measurements:**

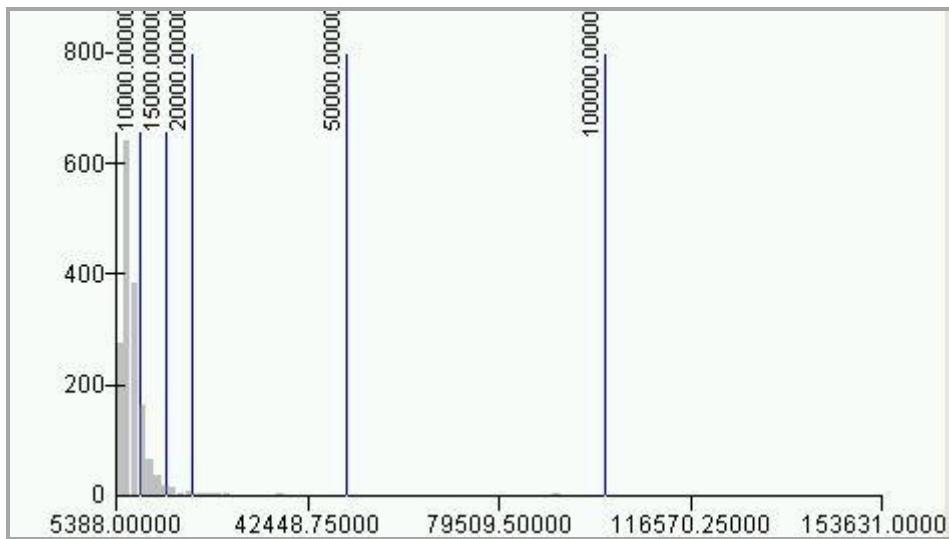
A total of 1,642 gamma radiation measurements were collected from the mine site, ranging from 5,388 cpm to 153,631 cpm. Measurements collected at the waste piles ranged from approximately 35,000 cpm to 150,000 cpm. The measurements are represented in Figures 6 and 7.

**Background Locations**  
#1 6,056 cpm

**Average background = 6,056 cpm**

**Distribution Chart and Statistics:**

The following chart and statistics were generated by ESRI ArcGIS 9.3.1, and show the general distribution of the site gamma radiation measurements. The horizontal X axis represents the gamma radiation reading levels in cpm (lowest levels to the left). The vertical Y axis represents the frequency of each gamma radiation level.



Count:	1642
Minimum:	5388.000000
Maximum:	153631.000000
Sum:	16045654.000000
Mean:	9772.01827
Median:	8148.50000
Standard Deviation:	9655.68668

**Part III        Status of Reclamation and Mine Waste****Mine ID #270**

**The following information was obtained from the Navajo Abandoned Mine Land Reclamation Program (NAMLRP) Point Features Database:**

**NAMLRP Status of the mine site: Reclaimed : Yes      Waste Pile onsite : No**

**NAMLRP Project Number: NA-0418**

**NAMLRP Mine features: 1 Portal**

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**The following information was obtained from field observations collected during the 2009 site screening:**

**Provide description and status of all mine sites and features at site. Include all waste piles, adits, pits and other features, and indicate whether they are open, closed, covered, capped, buried or unreclaimed. Indicate approximate size, shape and extent, including description of any reclamation caps. Note condition of all caps.**

**Observed reclamation work and status:**

**Adits**

None

**Waste Piles**

Debris in paths with elevated radiation, 100' x 50', with a total estimated volume of 926 yd<sup>3</sup>

**Pits**

None

**Shafts**

None

**Other Debris and Mine Features**

None

**Mine ID #272**

**The following information was obtained from the Navajo Abandoned Mine Land Reclamation Program (NAMLRP) Point Features Database:**

**NAMLRP Status of the mine site: Reclaimed : Yes      Waste Pile onsite : No**

**NAMLRP Project Number: NA-0413**

**NAMLRP Mine features: 2 Prospects**

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**The following information was obtained from field observations collected during the 2009 site screening:**

**Provide description and status of all mine sites and features at site. Include all waste piles, adits, pits and other features, and indicate whether they are open, closed, covered, capped, buried or unreclaimed. Indicate approximate size, shape and extent, including description of any reclamation caps. Note condition of all caps.**

**Observed reclamation work and status:**

**Adits**

Sealed adit in cliff wall, approximately 8-ft wide by 6-ft high

**Waste Piles**

Waste pile near adit, assorted smaller waste rock, 75' x 75', with a total estimated volume of 1,042 yd<sup>3</sup>

**Pits**

None

**Shafts**

None

**Other Debris and Mine Features**

None

**Mine ID #442**

**The following information was obtained from the Navajo Abandoned Mine Land Reclamation Program (NAMLRP) Point Features Database:**

**NAMLRP Status of the mine site: Reclaimed : None      Waste Pile onsite : No**

**NAMLRP Project Number:** None

**NAMLRP Mine features:** 1 Rim Strip / Pit

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**The following information was obtained from field observations collected during the 2009 site screening:**

**Provide description and status of all mine sites and features at site. Include all waste piles, adits, pits and other features, and indicate whether they are open, closed, covered, capped, buried or unreclaimed. Indicate approximate size, shape and extent, including description of any reclamation caps. Note condition of all caps.**

**Observed reclamation work and status:**

**Adits**

None

**Waste Piles**

Waste piles wash down into drainage, typically small, 15' x 15' (x5), with a total estimated volume of 208 yd<sup>3</sup>

**Pits**

None

**Shafts**

None

**Other Debris and Mine Features**

None

## Part IV

### Site observations and Environs

**Observed Structures: list number of and describe human habitation status of structures at the following distances from mine:**

**0 to 200 feet:** None

**200 feet to 0.25 mile:** None

**Observed Public or commercial structure: list and describe all schools, clinics, Chapter Houses, places of business and any other structure used by members of the community at the following distances:**

**0 to 200 feet:** None

**200 feet to 0.25 mile:** None

**Levels measured around the perimeter(s) of the identified structure(s):** None

**Observed water sources: list the number and type of wells and surface water sources that are potentially used for human consumption at the following distances from the mine:**

**0 to 0.25 miles:** None

**0.25 miles to 4 miles:** None

**Sensitive environments: note and describe all sensitive environments located within visible range of the mine site, including: wetlands, endangered species, habitats and approximate locations of sites that may be under protection of the government of the Navajo Nation.**

None observed

**Known Site History: include information from interviews with Chapter officials and residents. Note information on mine ownership, type of mining operation, period of operation, known amount of production, and any other information as provided.**

John John 1 consists of 3 mine sites with a total area of 19,070.63 m<sup>2</sup> (#270 – 2,627.70 m<sup>2</sup>, #272 – 4,776.41 m<sup>2</sup>, #442 – 11,666.52 m<sup>2</sup>). The mine was identified as being operational in 1955. Historical documents showed the operator of the mine as John John in 1955. While operational, the mine had a total reported production volume of 25 tons. No other historical information or any additional ownership / lease information was identified in the EPA/AUM database.

## **Part V            Response Action Summary**

**Site Name(s):** John John 1

**Chapter:** Beclabito

### **Decision Criteria**

**Is there an unreclaimed waste pile at the site?** Yes

**At what distance from the waste pile is the nearest residential structure located?** None

**At what distances from the waste pile are there potential drinking water sources?** None

**Is there a reclamation cap or sealed adit in place at the site?** Yes

**Is the cap/seal functionally intact?** Yes

**Is the cap/seal sufficiently degraded to create a concern about releases?** No

**At what distance from the cap/seal is the nearest domestic structure located?** None

**At what distance from the cap/seal is the nearest domestic drinking water source?** None

### **Summary of emergency response factors**

None

### **Summary hazard ranking system factors**

None

### **Summary of reclamation factors**

Waste piles found at each site

## Part VI Photos



Photo 1. Mine site #270 waste debris



Photo 2. Mine site #271 sealed adit and waste debris



Photo 3. Mine site #271

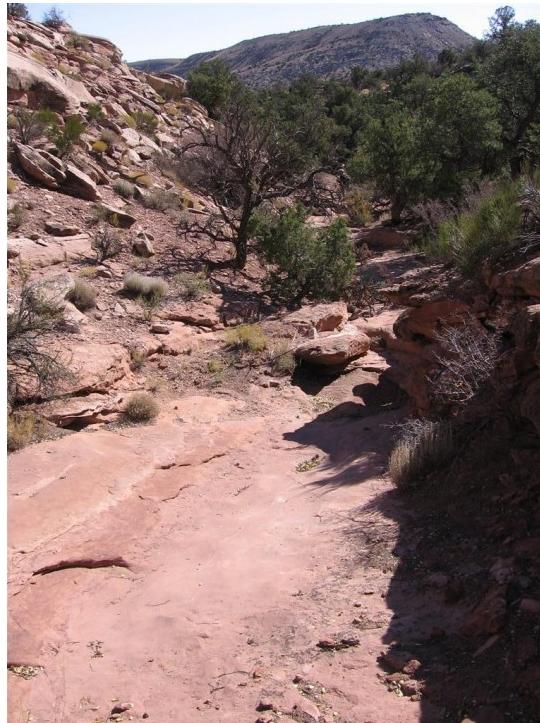


Photo 4. Mine site #442



Photo 5. Mine site #442



Photo 6. Photo 4. Mine site #442 waste debris



Photo 7. Mine site #442

**Part VII      Contacts Reports and Information**Name: Stanley Edison (928) 871-6861Eugene Esplain (928) 871-7331Title or official role (if any) Navajo EPA Superfund ProgramAddress PO Box 2946, Window Rock, AZ 86515Information provided Lead Regulatory Agency

Name\_\_\_\_\_

Title or official role (if any) \_\_\_\_\_

Address\_\_\_\_\_

Telephone number\_\_\_\_\_

Information provided\_\_\_\_\_

Name\_\_\_\_\_

Title or official role (if any) \_\_\_\_\_

Telephone number\_\_\_\_\_

Information provided\_\_\_\_\_

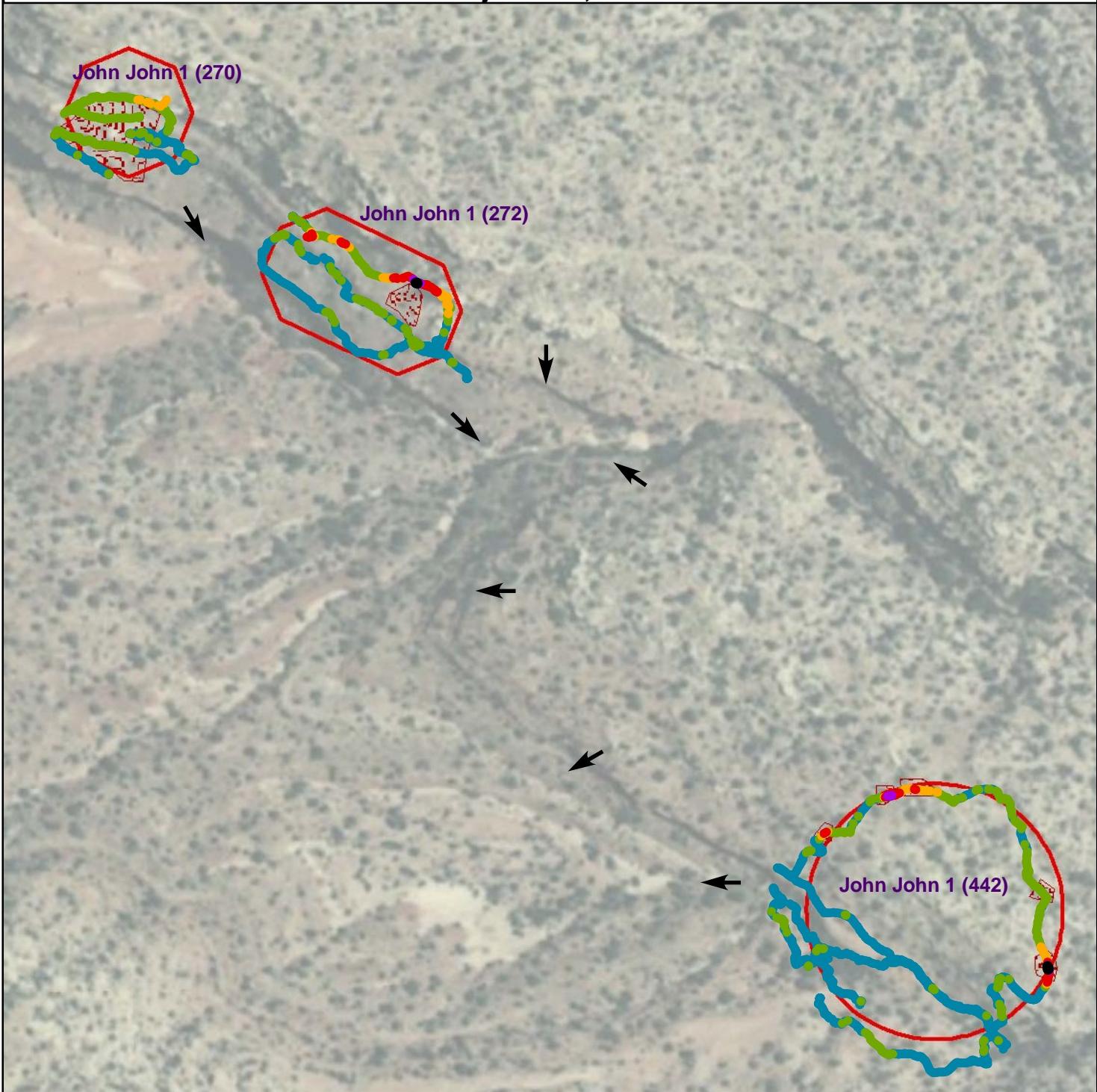
Name\_\_\_\_\_

Title or official role (if any) \_\_\_\_\_

Telephone number\_\_\_\_\_

Information provided\_\_\_\_\_

**Figure 1 - Gamma Radiation Measurements**  
**John John 1 Mines (270, 272, 442)**  
**Navajo Nation, Arizona**



### Legend

#### Gamma Radiation Measurements

- 0 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 50,000
- 50,000 - 100,000
- > 100,000

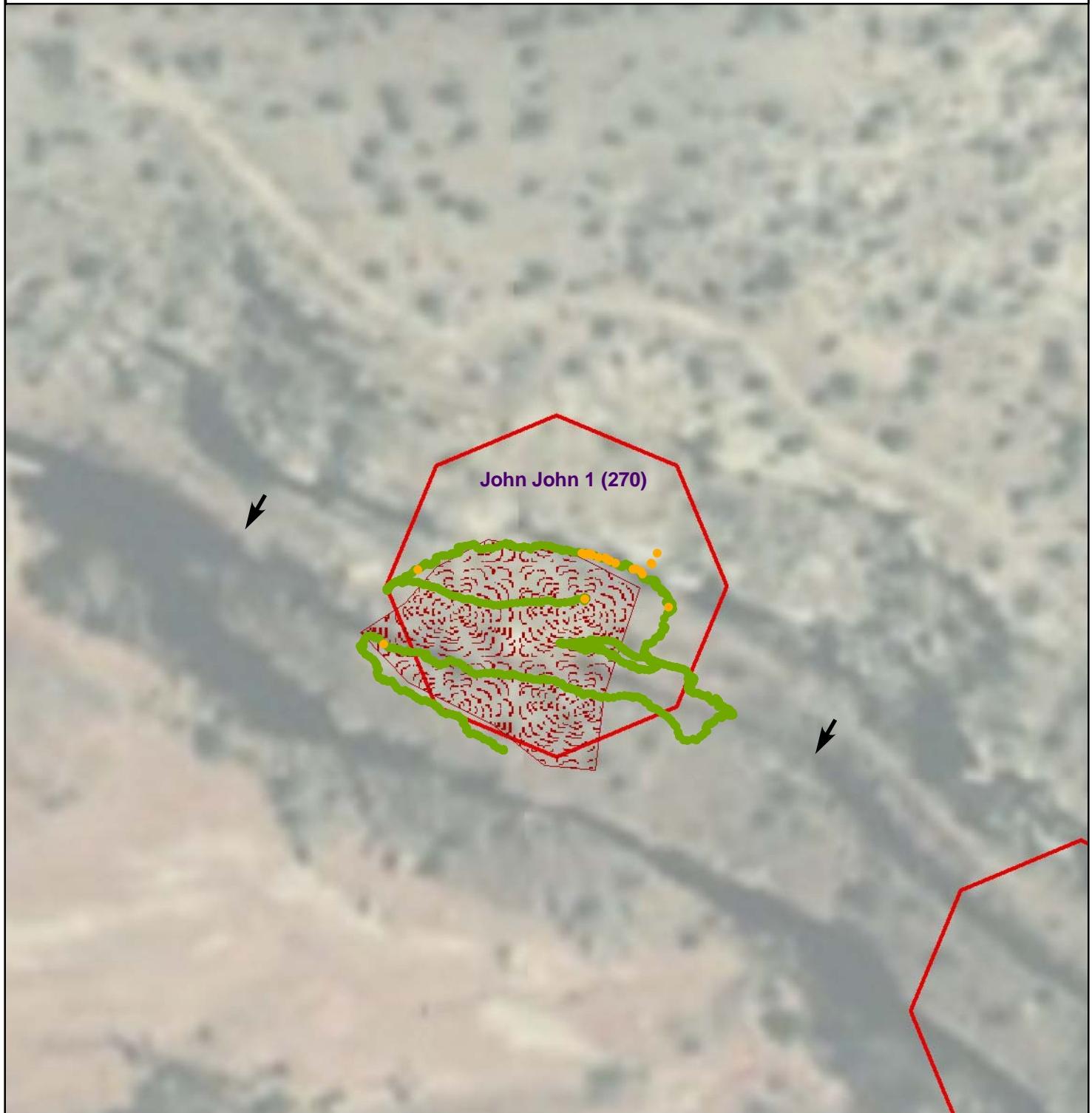
→ General Direction Down-Slope

■ Mine Claim Boundaries

Gamma survey conducted 10/2009  
Measured as counts per minute (cpm)



**Figure 2 - Gamma Radiation Measurements, Above Two Times Background**  
**John John 1 (270)**  
**Beclabito Chapter, Navajo Nation, Arizona**



### Legend

#### Gamma Radiation Measurements

- < 2X Background
- > 2X Background

Gamma survey conducted 10/2009  
Measured as counts per minute (cpm)

Average background = 6,910 cpm



Observed Waste Pile



General Direction Down-Slope

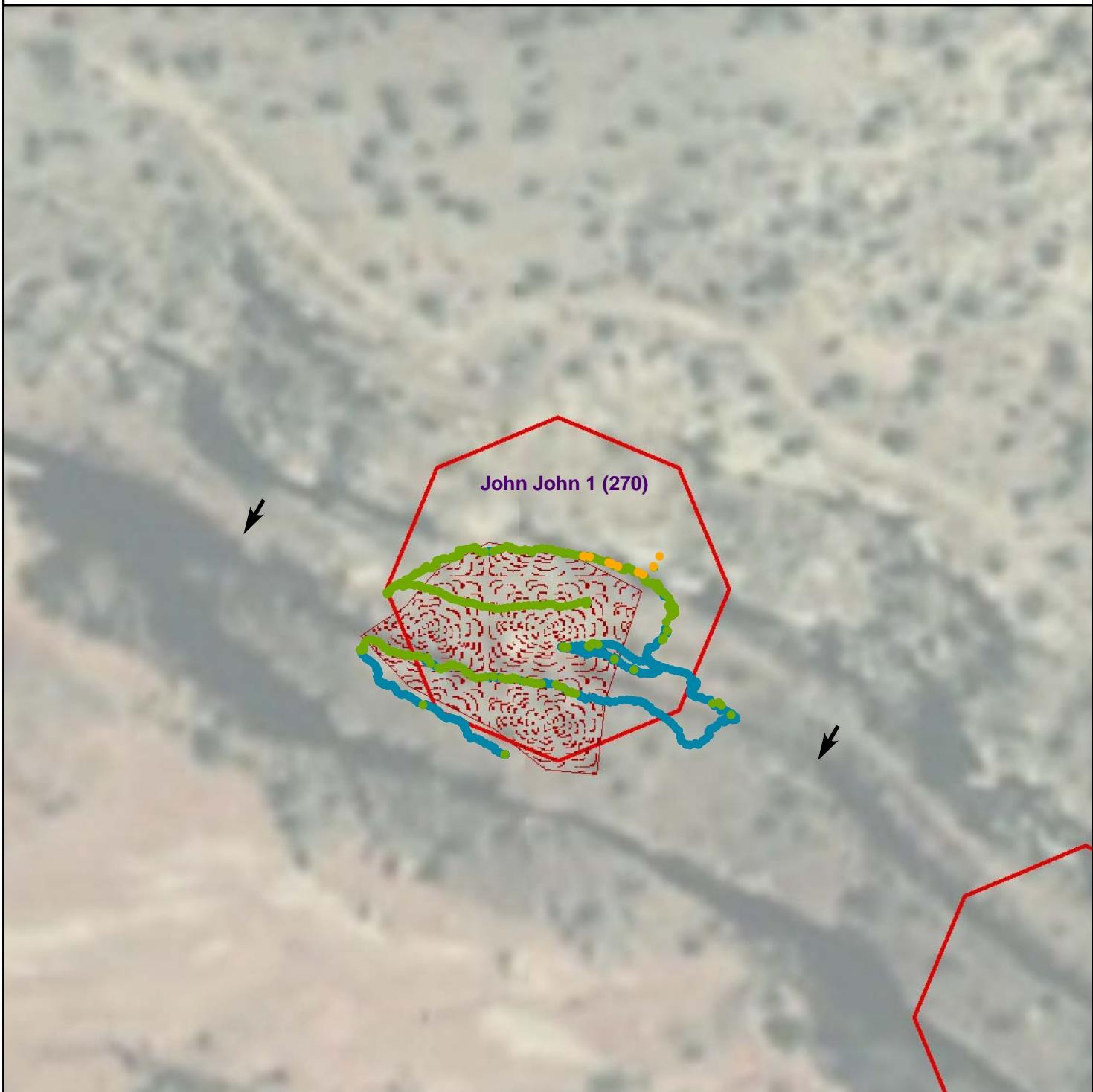


Mine Claim Boundaries



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**Figure 3 - Gamma Radiation Measurements**  
**John John 1 (270)**  
**Beclabito Chapter, Navajo Nation, Arizona**



### Legend

#### Gamma Radiation Measurements

- 0 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 50,000
- 50,000 - 100,000
- > 100,000



Observed Waste Pile



General Direction Down-Slope



Mine Claim Boundaries

Gamma survey conducted 10/2009  
Measured as counts per minute (cpm)

Average background 6,910 cpm



0

100 Feet



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**Figure 4 - Gamma Radiation Measurements, Above Two Times Background**  
**John John 1 (272)**  
**Beclabito Chapter, Navajo Nation, Arizona**



### Legend

#### Gamma Radiation Measurements

- < 2X Background
- > 2X Background

Gamma survey conducted 10/2009  
Measured as counts per minute (cpm)

Average background = 6,910 cpm



Observed Waste Pile



General Direction Down-Slope



Mine Claim Boundaries

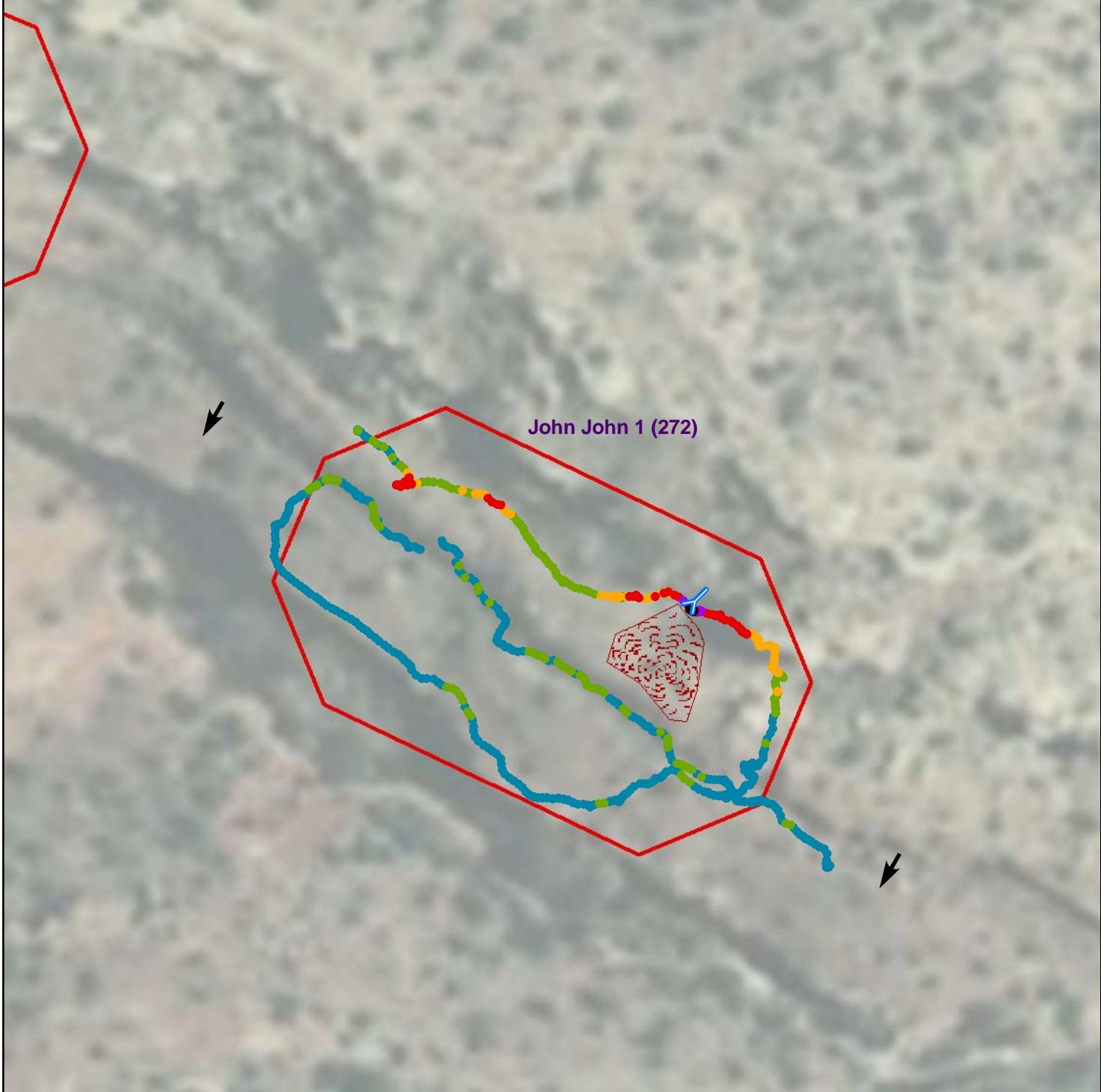


0 100 Feet



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**Figure 5 - Gamma Radiation Measurements**  
**John John 1 (272)**  
**Beclabito Chapter, Navajo Nation, Arizona**



### Legend

#### Gamma Radiation Measurements

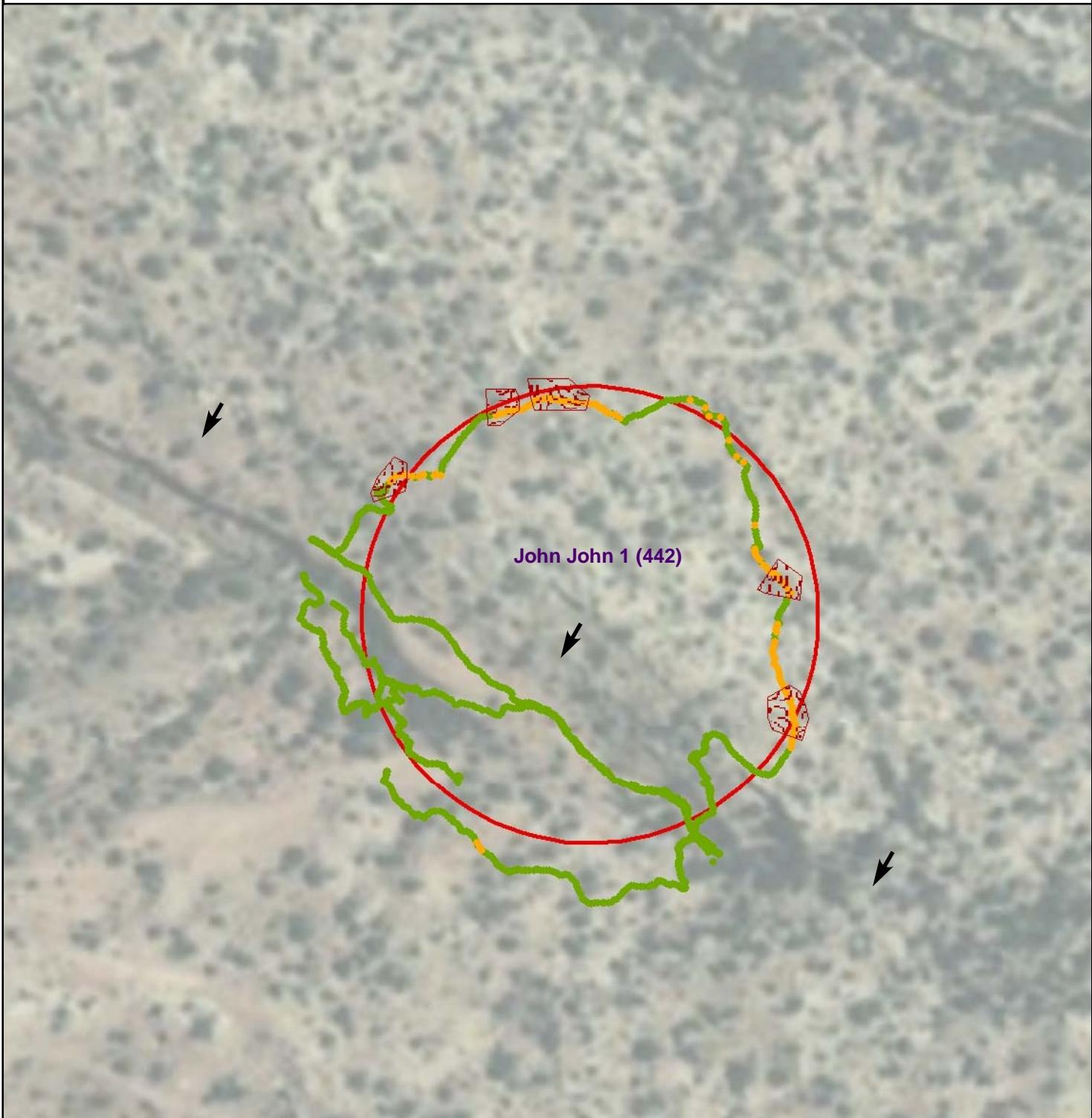
- 0 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 50,000
- 50,000 - 100,000
- > 100,000

 Observed Waste Pile  
→ General Direction Down-Slope  
 Mine Claim Boundaries  
Gamma survey conducted 10/2009  
Measured as counts per minute (cpm)

Average background 6,910 cpm



**Figure 6 - Gamma Radiation Measurements, Above Two Times Background**  
**John John 1 (442)**  
**Beclabito Chapter, Navajo Nation, Arizona**



#### Legend

##### Gamma Radiation Measurements

- < 2X Background
- > 2X Background

Gamma survey conducted 10/2009  
Measured as counts per minute (cpm)

Average background = 6,056 cpm



Observed Waste Pile



General Direction Down-Slope



Mine Claim Boundaries

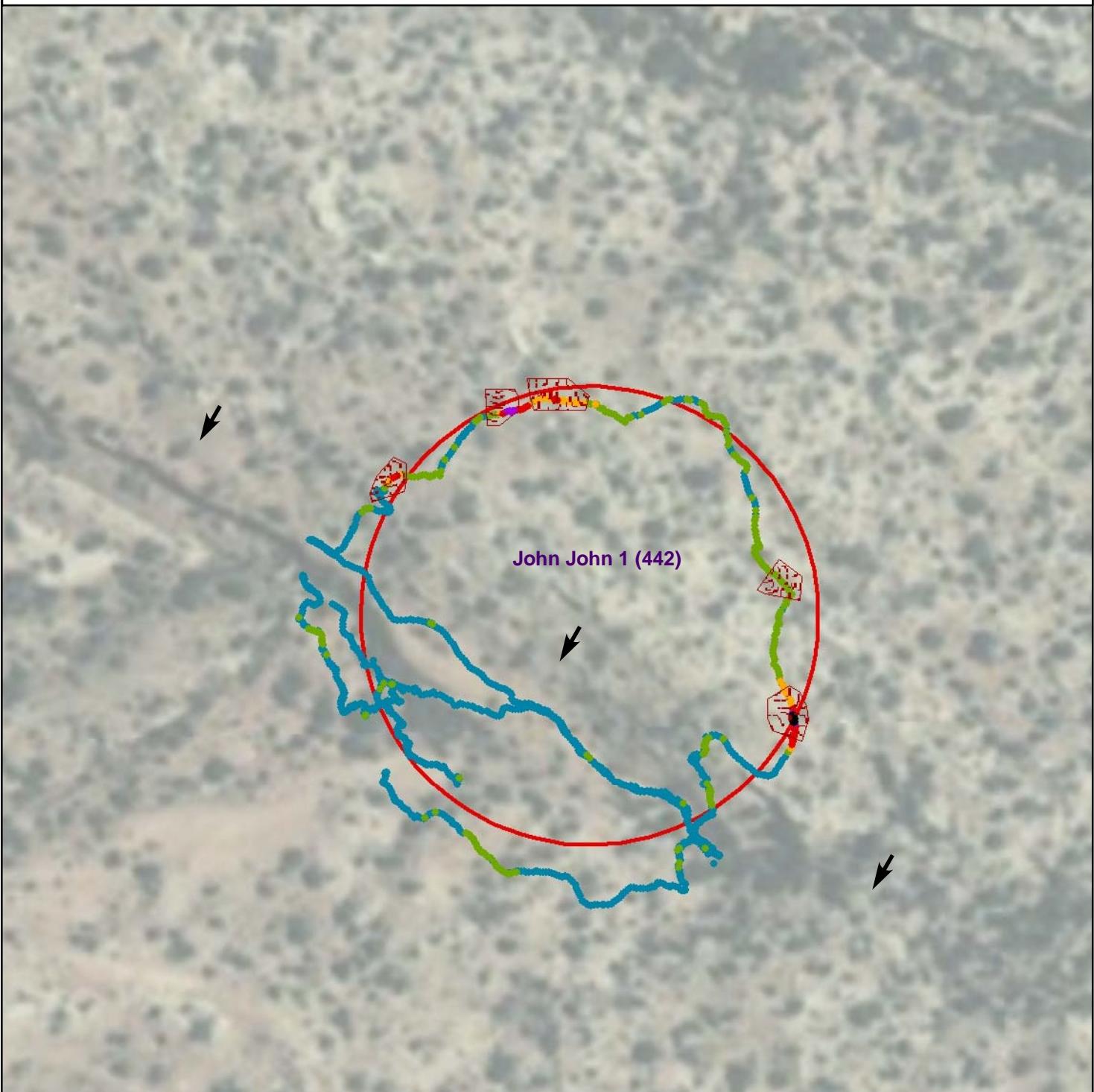


0 150 Feet



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**Figure 7 - Gamma Radiation Measurements**  
**John John 1 (442)**  
**Beclabito Chapter, Navajo Nation, Arizona**



### Legend

#### Gamma Radiation Measurements

- 0 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 50,000
- 50,000 - 100,000
- > 100,000

 Observed Waste Pile  
→ General Direction Down-Slope  
 Mine Claim Boundaries  
Gamma survey conducted 10/2009  
Measured as counts per minute (cpm)

Average background 6,056 cpm



0 150 Feet



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